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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,213	02/20/2004	Steven J. Fredette	C-3126	6680
7590 09/07/2007 M.P. Williams 210 Main Street Manchester, CT 06040			EXAMINER CLARK, CHRISTOPHER JAY	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 09/07/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/783,213

Applicant(s)

FREDETTE, STEVEN J.

Examiner

Christopher J. Clark

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 19 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see paragraph 2, filed June 19, 2007, with respect to Claim 1 have been fully considered and are persuasive. The 112 2nd paragraph rejection of Claim 1 has been withdrawn.
2. Applicant's arguments filed June 19, 2007 have been fully considered but are moot on new grounds of rejection. The examiner would like to note that the same prior art is applied, but the rejection is slightly altered in order to address the new limitations as well as the applicant's arguments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 2, and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jungreis (U.S. Patent 6,304,006; hereinafter referred to as "Jungreis '006") in view of Jungreis et al (U.S. Patent 6,134,124; hereinafter referred to as "Jungreis '124") and Gyugyi et al (U. S. Patent 5,329,222).
2. In re Claim 1, Jungreis '006 teaches the following apparatus as shown in Figure 3:
 - A generator delivering AC power (18, Column 2 Lines 56-57) to three phase lines (Line 1 of Column 1 indicates that the figures are shown in one-line diagram form)

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- An energy storage device (16, Column 1 Lines 15-16)
- An uninterruptible power supply (12, Column 1 Line 15) containing a DC/AC converter (A1, Line 17)
 - Connected to energy storage device (as seen in Figure 3)
 - Connected to three phase power lines (through switch S2 as seen in Figure 3)

3. Jungreis '006 discloses the claimed invention except for the implementation of a fuel cell power plant coupled to a DC to AC inverter to produce AC power. Jungreis '124 shows that a fuel cell power plant in combination with a DC/AC inverter is an equivalent AC generation known in the art (Column 3 Lines 44-47). Therefore, because these two power sources were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious at the time of the invention to substitute a fuel cell power plant with a DC/AC inverter for an AC generator.

4. Jungreis '006 as modified by Jungreis '124 also fails to teach a bi-directional converter capable of augmenting the response of the fuel cell and inverter to transients.

5. Gyugyi teaches a system comprising a bi-directional DC/AC converter (35, Column 5 Lines 20-24) connected to a storage device (31, Column 5 Line 10) that can augment the power transient responses on power lines by providing power to or removing power from the lines (Column 3 Lines 43-65 and Column 5 Lines 45-61).

6. It would be advantageous to replace the UPS of Jungreis '006 (the component 12 in its entirety) with the system as taught by Gyugyi is to provide a means to compensate for rapid transients in the power system since Gyugyi states that a UPS is incapable of doing such and is not suitable for a larger utility environment (Column 2 Lines 51-57).

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7. Jungreis '006 as modified by Jungreis '124 discloses the claimed invention except for the bi-directional converter capable of augmenting the response of the fuel cell and inverter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the system as taught by Gyugyi in place of the UPS taught by Jungreis '006, since Gyugyi states that such a modification would provide a means to compensate for rapid transients in the power system since Gyugyi states that a UPS is incapable of doing such and is not suitable for a larger utility environment (Column 2 Lines 51-57).

8. The examiner would like to point out that by replacing the entire UPS of Jungreis '006 as seen in Figure 3 with the system as taught by Gyugyi, the discrepancy concerning which mode of operation switch S1 of Jungreis '006 is carried out is no longer an issue.

9. In re Claim 2, Jungreis '006 as modified by Jungreis '124 and Gyugyi teaches the following:

- Three phase power lines being coupled to the critical load (14) through switch S2 [Figure 3 of Jungreis '006].
- The converter supplying power to a critical customer to avert lapses in power (Gyugyi teaches that transients are reduced during energy delivery in Lines 43-49 of Column 3, the examiner considers transients and lapses to be synonymous as a power transient can be considered to be a deviation from the normal operating power condition).

10. In re Claim 3, Jungreis '006 teaches the following as seen in Figure 3:

- Three phase power lines connectable by first switches (S3) to a three-phase power grid (10) [Column 1 Lines 53-62]

- The converter (12 as replaced by Gyugyi discussed above) connectable to said three-phase power lines by second switches (S2), said converter alternatively connectable by said second switches to said power grid (Column 1 Lines 34-42)

11. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jungreis '006 in view of Jungreis '124 and Gyugyi as applied to claim 1 above, and in further view of Hochgraf et al (U.S. Patent 6,794,844).

12. Jungreis '006 as modified by Jungreis '124, and Gyugyi has been discussed above, but does not teach a diode being connected between the fuel cell power plant and the battery.

13. Referring to Figure 2, Hochgraf et al teaches connecting the fuel cell power plant (24, Column 2 Line 59) to an energy storage device (28, Column 2 Line 60) through a diode (30, Column 2 Line 66). It should be noted that current (and thus power) can only be delivered from the fuel cell power plant to the energy storage device when there is greater voltage on the fuel cell power plant compared to the voltage of the energy storage device based on the known fundamental biasing characteristics of the diode.

14. The advantage of connecting the fuel cell power plant to the energy storage device through a diode is to provide an alternate source to replenish the storage device (31) so that it may continue to function properly during times of excessive transients.

15. Jungreis '006 as modified by Jungreis '124 and Gyugyi discloses the claimed invention except for the diode connected between the fuel cell power plant and the energy storage device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect a diode between the fuel cell power plant and the energy storage device as

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taught by Hochgraf et al in order to provide an alternate source to replenish the storage device (31) so that it may continue to function properly during times of excessive transients.

16. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jungreis '006 in view of Jungreis '124, Gyugyi, and Hochgraf as applied to claim 4 above, and in further view of Early et al (U.S. Patent 4,961,151).

17. Jungreis '006 as modified by Jungreis '124, Gyugyi, and Hochgraf has been discussed above but does not teach a switch to interrupt the connection between the fuel cell power plant and the energy storage device.

18. Early et al teaches having a switch (102) to interrupt the connection between the fuel cell power plant (103) and the energy storage device (101) [Column 8 Lines 33-38].

19. The advantage of adding a switch to interrupt the connection between the fuel cell power plant and energy storage device is to prevent the energy storage device from being overcharged (Column 8 Lines 51-55).

20. Jungreis '006 as modified by Jungreis '124, Gyugyi, and Hochgraf discloses the claimed invention except for the switch to interrupt the connection between the fuel cell power plant and the energy storage device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect a switch to interrupt the connection between the fuel cell power plant and the energy storage device as taught by Early et al, since Early et al states that such a modification would prevent the energy storage device from being overcharged (Column 8 Lines 51-55).

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Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

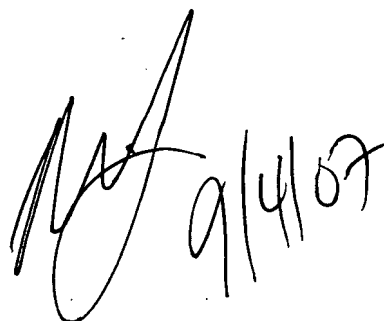
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher J. Clark whose telephone number is 571-270-1427. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJC
08/24/2007



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